Building Services News

Volume 50
Issue 3 *01/05/2011*

Article 1

5-1-2011

BS News May/June

bs news
building services news
May/June 2011

Building Management Systems and Controls

Mowlds is new CIBSE Chairman

Visit to Rettig Ireland in Limerick

Craft apprentices endangered

Exclusive Agent of

De Dietrich
Le Confort Durable®

Hevac's reputation has always been one of strength in respect of the scope and diversity of our product portfolio, and is also complimented by a work force representing vast experience, practical know how and technical excellence.

Hevac, through our vast product range and in conjunction with our sister companies offer an unrivalled design and supply capability on projects from residential schemes through to large industrial steam systems to district heating and other renewable energy projects.

www.hevac.ie

Tel: 353 1 419 19 19 | Email: info@hevac.ie

Hevac

Contents

bs news
building services news

ISSN 0791-0878

Published by:
Pressline Ltd, Carraig Court, George's Avenue, Blackrock, Co Dublin.
Tel: 01 - 288 5001/2/3 Fax: 01 - 288 6966 ISDN 01 - 211 2338/9
email: bsnews@pressline.ie
web: www.buildingservicesnews.com
www.bsnewsbuyerguide.com www.pressline.ie
Editor: Pat Lehane
Advertisement Director: Joe Warren
Origination and Design:
Pressline Ltd. Tel: 01 - 288 5001
Subscription: One Year – €70
Printed by: Swift Print Solutions (SPS).

opinion

Unity in the face of adversity

While most industry sectors in Ireland are well catered for by way of trade/professional representative bodies, building services has always been poorly served in this respect. This is especially true when it comes to business associations whose primary objective is safeguarding the commercial interests of members.

Over the years there have been various attempts to establish manufacturer/distributor, and installer, associations but these have either fallen at the first hurdle or faded away into obscurity within a matter of months. It is human nature that the absence of such bodies goes unnoticed in times of plenty but, when faced with the circumstances now prevailing, it is glaring.

While adversity can lead to desperation, it can also be an inspiration. Thankfully, there is now a very noticeable movement within building services whereby different industry sectors are coming together to serve their common objectives. All are adopting a professional approach and taking the time to ensure they are properly constituted and compliant with all legislative requirements.

Such is the strength of this movement that there may shortly be a sufficient number pro-active representative bodies within building services who could, in turn, affiliate with one another under an all-industry federation. The need for such a federation has never been greater but, on a positive note, the means by which it could be realised have never been stronger. This is very encouraging. ■

News and Products

Varming wins design excellence award

Varming Consulting Engineers have won the prestigious ACEI Annual Design Excellence Award for 2011 for the Charlestown Mixed Development Project.

The Charlestown site was purchased and developed by leading Irish developers, Bovale Developments, who have been responsible for major commercial and residential projects both in Ireland and the UK.

Charlestown Phase One is a fully-occupied major mixed development construction in North Dublin, consisting of shopping centre, retail, offices, crèche and apartments located adjacent to the M50/N2 junction. Phase One was opened in 2007 and consists of a 50,000sqm development spread over 285 apartments situated on a podium deck over a retail shopping centre.

The scope of the initial design activity included the development of the site infrastructure for all future phases (2, 3 and 4), which will consist of over 100,000sqm of retail, offices and residential development.

Pictured receiving the Award at the recent Annual ACEI Dinner held in the Four Seasons Hotel Dublin are James Kavanagh, Varming Joint CEO; Eamon Timoney, ACEI President; Joe Byrne, Varming Project Director; and John Purcell, Varming Chairman.

National Skills Competition in plumbing

The final stage of the National Skills Competition in plumbing was held in DIT Bolton Street recently. It included a speed/skill test in which each of the competitors had to disconnect and remove an Aqualisa bath/shower mixer, and then install, pipe up and test a wall-mounted Aqualisa shower mixing valve in its place.

This test was carried out in addition to the 18-hour final test project which is assessed separately.

Ciaran Timmins, Managing Director MT Agencies Ireland pictured with Mark Moynagh, Blanchardstown IT; Wayne Fitzgerald, Cork IT; Padraig Fay, Athlone IT; John Smartt, Chief Examiner for Plumbing; Anthony Burke, Dundalk IT; Daniel Rattigan, DIT, winner of the 2011 National Skills Competition in Plumbing and Ciaran Cody, Waterford IT, winner of the Aqualisa speed/skill test.

SEAI Energy Awards

SEAI has now commenced assessment of entries for the Sustainable Energy Awards. Sponsored by ESB Electric Ireland, the Awards competition is open to private and public sector organisations of all sizes throughout the island of Ireland.

There are nine categories in total, including categories for energy efficiency, renewable energy, innovation, energy awareness, and the prestigious Energy Manager of the Year award.

Commenting on the the Awards, Professor J Owen Lewis, CEO, SEAI said: "Companies across Ireland have made huge strides in energy management in recent years resulting in significant savings on energy costs. We have seen that companies are not just adopting the latest sustainable energy technologies, but are embracing energy awareness programmes and a new way of thinking around energy management driven by staff and management alike."

Entrants to the 2010 Sustainable Energy Awards demonstrated energy savings of €17 million in one year alone, with an additional €40 million in projected cost savings identified.

Further information on the 2011 awards can be found on SEAI's website: www.seai.ie/energyawards

Hitachi Air Conditioning

Engineering for tomorrow. And the tomorrow after that.

IVX Utopia Split Systems

All the benefits of VRF, without the price tag

An efficient multi tasker

With further refinements to the DC inverter compressors and fan motors for increased efficiency even at low speeds.

All the flexibility of VRF

Individual indoor unit control with an increased number of twins, triple and quad combinations.

Seasonal performance

The optimised refrigerant circuit increases seasonal COP for heating and seasonal EER for cooling by 4%.

Great comfort

Features like cold draft prevention, frost protection, low noise and reliability are second to none, and available as standard.

The award-winning Utopia is an excellent choice for twin, triple and quad combinations. As well as compressor optimisation for part-load efficiency, IVX offers increased comfort at reduced cost for every season. Improved connectivity on the IVX Series (4-6HP) and more flexibility (with 90-115% diversity) provides a great advantage, as well as the capacity to accommodate a greater combination of individually-controlled indoor units. Available with heating and cooling capacities from 5kW to 33kW, the new optimised models include the 5kW–16kW versions.

Utopia gets into all the right zones, without the cost of VRF.

To find out more call Hitachi on **+353 1216 4406**
Email **aircon.ireland@hitachi-eu.com** or visit **www.hitachiaircon.com**

HITACHI
Inspire the Next

News and Products

Worcester Bosch roadshow success

Ms Ray McClay of Worcester Bosch told *bs news* as we went to press that she was particularly happy with the excellent turnout at all the venues during the company's recent nationwide tour.

The 10-stop marathon was carefully designed to take in the entire country and attracted an all-industry mix of installers, local authority personnel and consultants. In addition to existing customers, Ray said that they were both surprised, and pleased, that a very high percentage of visitors were new contacts.

The fully fitted domonstration truck and van included a comprehensive cross-section of the entire Worcester Bosch portfolio, all in working order, while company personnel were also on hand to discuss product quality, warranties, after-sales service, best practice, training/ educational programmes, legislation, etc.

Contact: Ms Ray McClay, Worcester Bosch Group. Tel: 0044–776 743 2567; email: ray.mcclay@uk.bosch.com

Whelan elected FPP President

Derek Whelan, Operations Director at Pitney Bowes, has been elected President of the Forum on Public Procurement in Ireland (FPP). In addition, Cecil Ryan, Regional Director, OCS Ireland has been elected Vice-President, while Tony Redmond, Procurement Manager, Railway Procurement Agency, has been elected as Vice-President and Treasurer.

Public procurement is one of the largest sectors of sustained economic activity in Ireland. Since 1996, FPP has drawn on expertise from both the public and private sectors to work towards improving the practice of public procurement to both achieve value for public money and opportunity for Irish business.

The new officers will be leading the publication of newly-framed FPP proposals to reform the public procurement process, including the regular audit of procurement practices and improving the general professionalism of public procurement at all levels.

Chicken farm heaters from Hevac

Karl Carrick and David Doherty from Hevac recently took a group of farmers from Ireland to visit several chicken farms in Szczecin, Poland, where its range of Flowair LTHW Agro heaters are manufactured.

Farm co-op representatives from Ireland were very impressed with the specifically-designed Flowair Agro units and Flowair's control design technology. Flowair, in conjunction with Hevac, will provide heating systems for Irish chicken farms which include the control of the heating system incorporated into the farm's BMS system taking into account the temperature, humidity and fresh air requirements of the chickens.

The polish installation visited was very impressive, producing 300,000 chickens every eight weeks. The group was amazed to see the Polish chicken sheds in three-storey high buildings with circa 20,000 chicks on every level. Traditionally in Ireland chicks are only produced in single storey buildings.

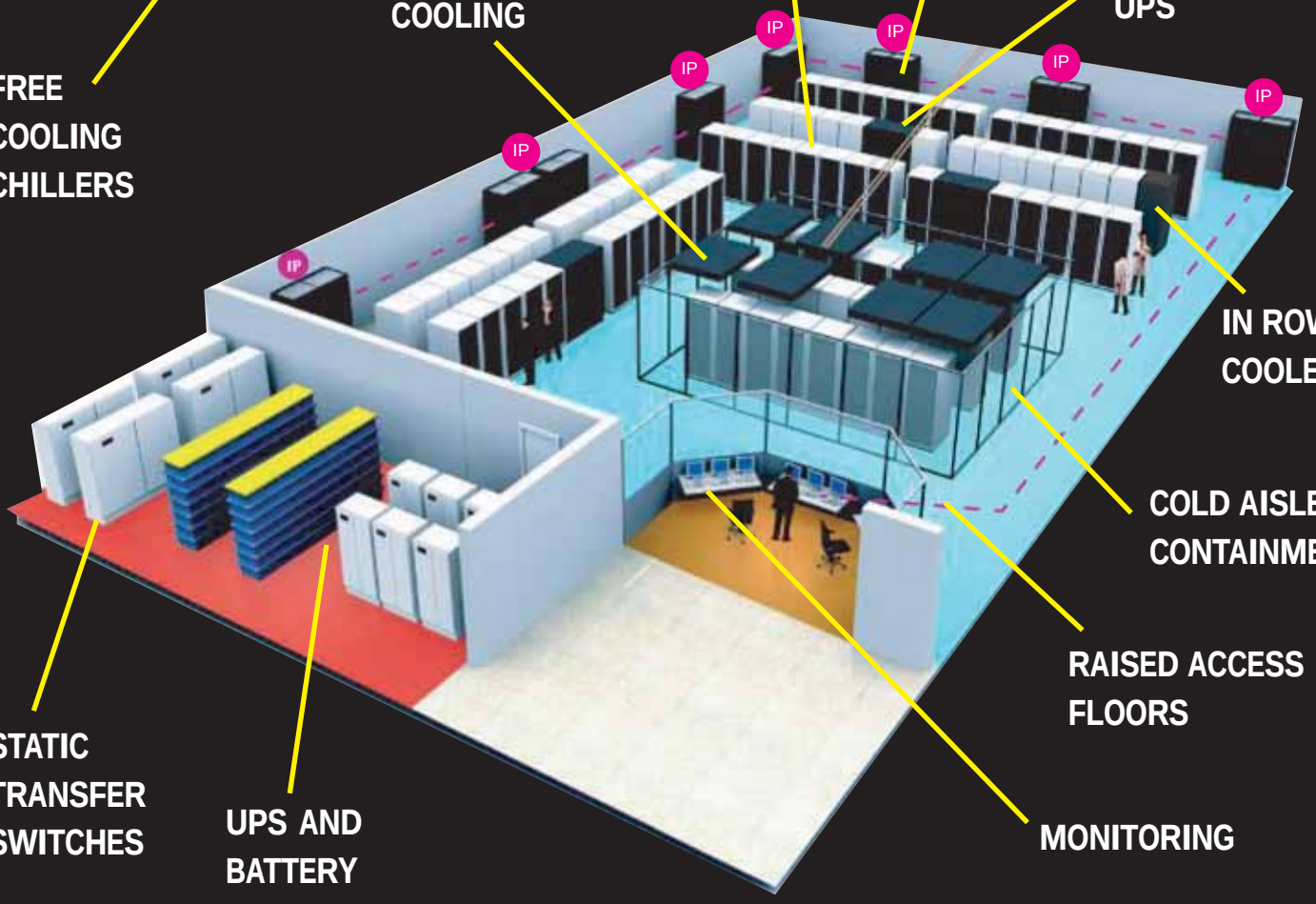
Fully grown chickens are produced in a six-week period with two weeks to clean and detox the shed before next delivery of chicks arrive. Each shed produces 6.5 production runs per year.

Contact: Karl Carrick or David Doherty, Hevac. Tel: 01–419 1919. www.hevac.ie

EMERSON
Network Power

CORE AIR CONDITIONING

YOUR DATA CENTRE EXPERTS



core AIR CONDITIONING LTD

Unit A6, Centre Point Business Park, Oak Road, Clondalkin, Dublin 22
Tel: 01 - 409 8912; Fax: 01 - 409 8916;
email: info@coreac.com; Web: www.coreac.com

News and Products

CIBSE Bolton Street awards

The CIBSE Building Services Engineering Annual Student Awards, and the inaugural Albert Byrne Memorial Award, took place recently in Bolton St College of Technology.

Papers were presented by the ordinary and honours degree student finalists including the following:

- John Balfe – *Sick building syndrome;*
- David Lynch – *The fundamentals of wind energy;*
- Adam Dent – *Radon;*
- Killian Gaffney – *Large-scale energy storage;*
- Ben Carry – *District heating systems;*
- John O'Flynn – *Biomass in Ireland.*

Back Row: Alan Duggan, then Chairman of CIBSE with Jim Rogers, Varmings; Ben Costelloe, DIT; and Damien Flynn, Arup. Front Row: Adam Dent (3rd place BTech) with Ben Carvery (2nd place BEng Hons); Killian Gaffney (1st place BEng Hons); John Balfe (1st place BTech); Albert Byrne (WIT); David Lynch (2nd place BTech); and John O'Flynn (3rd place BEng).

The judging panel included Alan Duggan, ARUP; Damien Flynn, ARUP and Jim Rogers of VMRA.

The judges and Mr Byrne commented on the high standard of the written theses and presentations by the students. The top prizes for the honours and ordinary degree students went to Killian Gaffney and John Balfe respectively.

Albert Byrne, Head of Engineering Technology at WIT, and his wife Maria, also attended the ceremony for the inaugural presentation of the Albert Byrne Memorial Award. This was in memory of his father who contributed so much to building services engineering, especially during his years at DIT.

The new award, initiated by Alan Duggan, CIBSE Chairman, recognises the outstanding graduate from each honours degree cohort and was awarded to Colin O'Reilly.

Daikin VRV®III heating only

The VRV®III heating only system by Daikin uses renewable energy from the outdoor air to drive the heating process. It generates 4kW of usable heat for every 1kW of electricity consumed, thereby reducing both the energy consumption and CO2 emissions of a building.

Even when the electricity used comes from non-renewable sources, CO2 emissions are still claimed to be much lower than boilers that burn fuel oil or natural gas. Thus VRV®III heating only reduces a building's heating costs and its environmental footprint.

VRV®III heating only is designed for buildings of all sizes with diverse heating needs. It is ideal for public buildings in climates where summer cooling is not required. Outdoor units from 25kW to 170kW support up to 64 separate indoor units, with each indoor unit receiving only the heat it needs.

Contact: Daikin Europe Ireland Office. Tel: 01 – 642 3430; email: info@daikin.ie

SEAI Micro-CHP trial yields positive results

A field trial commissioned by SEAI to assess the operation, performance and benefits of micro-CHP in commercial situations has found that systems can deliver energy and CO2 savings, and in many cases, achieve a payback of four to eight years.

Thirteen sites across Ireland were selected for the trial which commenced in 2008, including nursing homes, hotels, hospitals, a crèche, offices, an apartment block and a fire station. A micro-CHP appliance or multiple appliances were installed at all sites which included both existing buildings and new-build developments.

In existing buildings and boiler house refurbishments, the micro-CHP appliances were installed alongside the current heating system; in the new builds, they were integrated into the system design.

At each site, measurements were made of the gas and electricity consumed and of the electricity generated and the heat produced (both for space heating and for hot water).

This data was then assessed with regard to overall engine efficiency, primary energy savings, run hours and carbon benefit ratio and absolute CO2 savings. Maintenance and system integration was also considered, as these are very important determinants of the success of an installation.

The report monitored the performance at all thirteen sites and concluded that micro-CHP systems in commercial sites that are well designed and installed deliver reasonable levels of efficiency and CO2 savings, and are at least as cost-effective as competing alternative energy technologies, such as solar thermal, small scale wind and solar photovoltaics.

TA Hydronics gives you the right answers on every level

PNEUMATEX › Pressurisation & Water Quality

TA › Balancing & Control

HEIMEIER › Thermostatic Control

Pressurisation & Water Quality › Balancing & Control › Thermostatic Control

ENGINEERING ADVANTAGE

Three leading hydronics companies have joined forces to make sure you have the solutions you need to optimise efficiency and comfort.

Pneumatex, TA and Heimeier are now one exceptional company called TA Hydronics. This means we now provide you with everything you need to optimise hydronic distribution in buildings of all sizes and can help to increase HVAC system efficiency by up to 30%.

Find out how one company can help you meet every hydronic challenge at: www.tahydronics.com

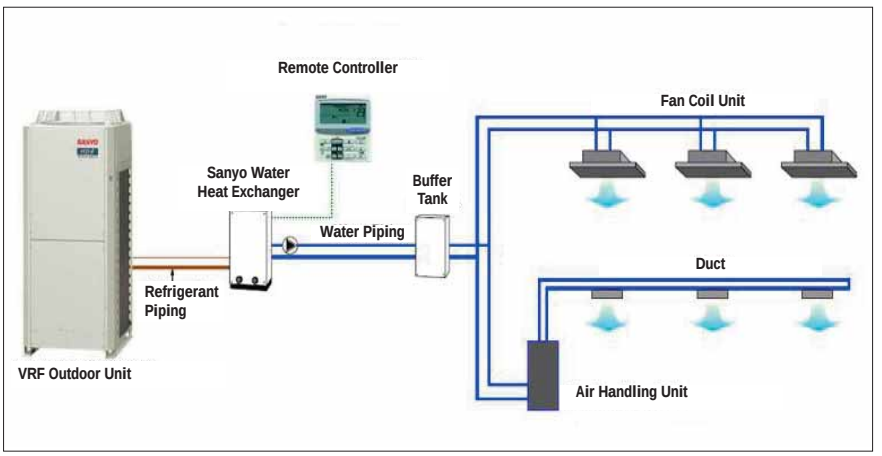
PNEUMATEX › TA › HEIMEIER ›

TA HYDRONICS

If no new construction then refurbishment and replacement must be the answer

It is no secret that the last few years have been the toughest for the air conditioning industry in living memory. From the highs of around 2007 and 2008 to the current market level, we have seen a drop of astronomic proportions. Every company in the supply chain has had to adjust and fight just to survive (and some unfortunately haven't). However, it is the ability of a company to change, evolve and take advantage of what opportunities are out there that will distinguish the winners from the 'not so fortunate'.

The first cut in most cases is overheads (people, cars, offices), followed rapidly by investment (marketing, product development).



Although these may be key to survival, they do not guarantee long term success – still being here does not mean you will win when the opportunities come. By now most companies are as lean as they can become without being anorexic, so now is a time to look for what opportunities do exist and diversify into them.

We all know that the construction industry is 'on it's knees' and therefore air conditioning projects for new-build are extremely rare. So, we have to consider that the opportunities lie within the existing building stock. Hence maintenance, refurbishment and replacement must be targeted.

Many companies are surviving on maintenance, and end-users with limited funds are surviving on 'patch it and run it' policies. However, this is often a false economy and old inefficient equipment could be replaced, and a large amount of this cost can be recovered from the running cost savings. In addition, legislation can have an effect upon end-user priorities. The need to replace R22 systems due to lack of refrigerant availability will also open opportunities, but in all cases the replacement costs must be realistic and a sound business case must be presented. Energy is at a premium, therefore this is one of the priorities to save.

This is why Sanyo is continuing to invest and develop products that are ideally suited to these opportunities, and this year is no exception.

The Sanyo Renewal system for replacing R22 equipment has been a huge success since its introduction in 2010. The benefit of allowing existing pipework to be re-used can save the client thousands of euros. Plus, the ability to replace not just Sanyo equipment, but that of all major manufacturers, means that this benefit can be applied to most applications. Whether split systems or VRF, an instant halving of running costs can be achieved when comparing a R410a modern inverter system with an on/off R22.

New for 2011 is the introduction of a water heat exchanger for electric VRF systems, aimed firmly at chiller replacement or the air handling marketplace. Imagine a building with an old large central system, the building usage has changed (maybe some empty areas) yet the energy usage is still high as the whole system needs to run. Now the chiller can be replaced with an electric inverter-controlled VRF system supplying chilled water to exactly match the building load requirement, a massive energy saving. Sanyo has been supplying this product with great success connected to its GHP system, so now all options are complete.

With other new water and energy saving systems to be introduced during 2011, Sanyo will continue to invest and take advantage of all opportunities.

Evolution is the key to future success.

Contact: Vincent Mahony, Sanyo Air Conditioners. Email: Vincent.mahony@sanyo.com ■

EFFICIENCY MAKES A DIFFERENCE

EFFICIENT, QUIET, SLIM - THE NEW COPELAND EAZYCOOL™ ZX

Responding to the demands of low energy consumption, sound restrictions and space constraints, the latest Copeland EazyCool™ ZX range of outdoor condensing units provide today's end-user with the ability to reduce energy costs, and to satisfy both noise and planning requirements in urban surroundings. The EazyCool ZX range was designed incorporating efficient Copeland Scroll™ technology, including design features such as multiple protection functions providing the highest level of compressor reliability. Sound attenuation is improved through the utilization of a compressor sound shell and unique fan speed control.

With contractors facing an increase in the demands from customers for reduced space installations, EazyCool ZX provides a solution with one of the smallest footprints in the market. The ease of installation and commissioning helps to provide the installer with the most practical and economical answer for all small and medium convenience stores.

For more information please contact your local representative or visit www.emersonclimate.eu

Copeland® EazyCool™

EMERSON™ Climate Technologies

Emerson Climate Technologies Ltd., Unit 17 Theale Lakes Business Park, Moulden Way, Sulhamstead Berkshire, RG7 4GB. United Kingdom.
Web: www.emersonclimate.eu - E-mail: UK.Sales@Emerson.com - Phone Number : 01189 838000

Hitachi Eutopia IVX is EuP seasonal efficiency compliant

Installers and end users of air conditioning units will soon begin to reap the rewards of the new European legislation on Seasonal Performance, according to Fergus Daly of Hitachi, once the draft Energy using Product (EuP) Directive from the European Commission comes into force in 2013.

During manufacture, the performance of air conditioning equipment will then be measured according to its seasonal efficiency rating over the whole year, and not at nominal capacity as currently. Many cooling and heating temperatures will be taken into account, which are in line with the Ireland's differing seasonal temperatures, and this will make for a more accurate assessment.

During the tests, the air conditioning device will be operated at partial load as well as at full capacity. Models which incorporate inverter technology, which varies the capacity to match the required loading, will offer advantages here.

The new grading (Seasonal Energy Efficiency Ratio or ESEER) will be more meaningful to users when selecting equipment. It should make it easier to establish roughly how much a customer will need to pay out in energy costs throughout the year.

Manufacturers of air conditioning units have been optimising models for improved seasonal performance which is particularly pertinent as, after the regulations come into force, all new units that are unable to meet EuP requirements will be prohibited.

Always looking to improve on its product offering, Hitachi Air Conditioning Group has enhanced its Utopia IVX and ES Series of outdoor units to include a greater level of customer comfort and increased seasonal efficiency, as well as easier installation. The Utopia series is available with heating and cooling capacities from 5kW to 33kW, and the new optimised models include the 5kW to 16kW versions, which are ideal for many types of buildings, including shops and offices.

The Utopia range is highly efficient because it incorporates DC inverter compressors and fan motors; in addition, efficiency at low speed has been significantly enhanced. Further refinements to the compressor and DC motor, as well as optimisation of the refrigerant cycle, has increased the seasonal COP (SCOP) for heating and seasonal EER (SEER) for cooling by 4%, compared to previous models.

The optimised refrigerant circuit not only minimises the amount of refrigerant, but there is a corresponding reduction in the amount of CO2 emitted because of the greater efficiencies achieved.

Flexibility without VRF

Traditional twin, triple and quad multi-split systems do not allow customers individual unit control. However, the individual unit control available in the new Utopia IVX models enables a customer to control different temperature demands in up to four separate areas on one system, without resorting to the expense of a VRF system.

For twin, triple and quad split configurations, the increased connectivity on the 10kW, 12kW and 16kW Utopia IVX models, plus greater flexibility (with 90-115% diversity) and the ability to have a greater capacity imbalance between the indoor units, allows users to match individual areas more efficiently. The ability to make independent adjustments to, or even stop a single unit, reduces electricity usage and ticks both the environment and cost-cutting boxes.

Hitachi Utopia and ES Series of outdoor units offer increased seasonal efficiency, as well as easier installation.

Hitachi's new Utopia ES also caters for an increased number of twin, triple and quad combinations, as well as being optimised for seasonal efficiency.

Fergus Daly of Hitachi Ireland says: "We are pleased with the improvements to our Utopia IVX and ES Series of air conditioning units, which offer many benefits to installers and customers. New technology leads to increasingly-higher levels of comfort, efficiency and flexibility for the end user, while new legislation is raising the bar all the time."

Contact: Fergus Daly, Ireland Area Sales manager, Hitachi Europe. Tel: 01 – 216 4406; 087 – 2779405; email: Fergus.daly@hitachi-eu.com ■

Springboard @ DIT. Free courses for jobseekers.

The Department of Electrical services Engineering in DIT have been approved for 180 places on the Government funded Labour Market Activation scheme *Springboard.* As part of the Springboard scheme, places are available on all part-time under graduate and post graduate programmes run by the Department.

Anybody in receipt of Jobseekers Benefit/Jobseekers Allowance Payment or One Parent Family Allowance Payment are eligible. Places are available on programmes from Level 6 – Higher Certificate in Electrical Services Engineering to Level 9 – MSc in Energy Management.

Those who take a place on these programmes can retain their benefits and if they find a job, they will still be permitted to finish their studies. Course fees are paid by the fund. Applicants must be in receipt of an allowance for six months when the course begins in September.

Programme Code	Description	NQAI level	For Entry applicants need	Award
DT 078 year 2	ESE	6	Phase 6 of electrical apprenticeship	
DT 078 year 3	Cert final year ESE	6	DT 078 year 2 completed	DIT Certificate in ESE
DT 083 year 4	B Eng Tech Degree ESE	7	Cert in ESE (DT 078 year 3)	
DT 083 year 5	Final year B Eng Tech Degree ESE	7	DT 083 year 4 completed	B Eng Tech in ESE
DT 018 year 1	Honours Degree	8	A B Eng Tech in ESE or other approved engineering degree e.g. building services or mechanical engineering	
DT 018 year 2	Honours Degree	8	DT 018 year 1	BSc in ES & Energy Management
DT 015 year 1	Masters in Energy Management	9	At least a 2.2 in an honours degree or equivalent.	
DT 015 year 2	Masters In Energy Management	9	DT 015 year 1	
DT 015 year 3	Masters in Energy Management	9	DT 015 year 2	MSc In Energy Management

Notes:
1. ESE stands for Electrical Services Engineering;
2. For the MSc programme must have completed an honours degree at least three years previously to qualify for Springboard.
3. Existing students on these programmes are eligible if they are in receipt of allowance.

For more information please contact Iseult Kelly at: **iseult.kelly@dit.ie** or Kevin Kelly at: **kevin.kelly@dit.ie**
T: 01 4024617 and see **www.dit.ie/springboard** for full details.

BlueBrick.ie
BUILD A BETTER FUTURE

SPRINGBOARD
Improve your job prospects

HEA
Higher Education Authority
An tÚdarás um Ard-Oideachas

Full range – fully equipped

All the advantages of Emerson Climate Technologies EazyCool™ ZX condensing units are now available for medium as well as for low temperatures … and a little bit more.

Recent growth in the convenience store sector located within the urban environment has seen a demand for refrigeration systems that are compact, low-noise and have a low carbon footprint. Most of the stores merchandise is well served for medium temperature application with an array of outdoor units available. However with the increased demand for frozen food, these units are not ideal. As a result, more economical but also more practical refrigeration systems are being requested.

Emerson Climate Technologies has reacted to this growing demand. The outcome is the range of Copeland EazyCool ZXLE units. Five new condensing units specifically designed for low temperature applications complement the existing medium temperature ZXME model (Figure 1). In addition, a further four models for medium temperatures with single-phase voltage are being launched.

When developing the new Emerson EazyCool ZX condensing units focus was on two main objectives:
– to improve system efficiency and reliability to help to reduce the life cycle costs significantly;
– Installation and operation of the condensing unit to be as simple as possible.

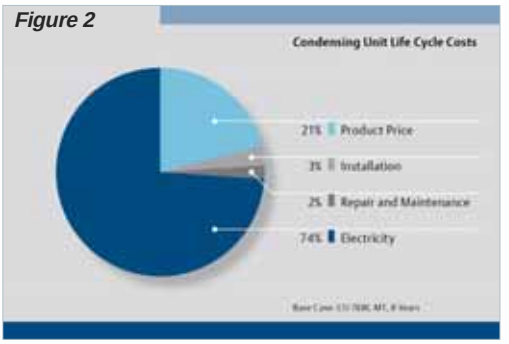
"Both of these objectives should be realised in a compact housed unit with a low sound level", explains Mark Lenz, Product Manager for condensing units at Emerson Climate Technologies. "With efficiency increasingly becoming more of an important criterion when deciding for or against a product, the new EazyCool™ ZX-unit range is setting a high benchmark". The efficiency advantage of the Copeland-scroll compressor is reinforced by a generously-sized condenser, able to operate in ambient temperatures as high as 48˚C.

In addition, the low temperature models feature Enhanced Vapour Injection, providing improved efficiency. Sickle blade fans with intelligent speed control are also supporting this aspect. In comparison to condensing units using reciprocating hermetic compressors, the ZX range provides up to 20% lower energy costs. The outcome is COP values up to 2.49 at medium temperature and 1.32 with low temperature applications (EN13215*).

Considering that running costs make up nearly 75% of the total life-cycle costs (Figure 2), it is important to choose the right technology to benefit from the highest saving potential. With energy costs expected to continually increase in coming years, proven life-cycle cost savings will only accelerate in the future from today's levels.

But what about the concept "ready to install? Suction accumulator and oil separator have been integrated as standard in the new low temperature ZXLE units", explains Markus Lenz. "In addition, a new diagnostic module has been developed and installed into the condensing unit". With CoreSense™ diagnostics the system status is monitored in real time and the installer gets the relevant information about the unit operation mode at a glance. The built-in electronics also provide unique protection for the compressor against over-current, phase-imbalance, phase loss or incorrect phase rotation.

Figure 2

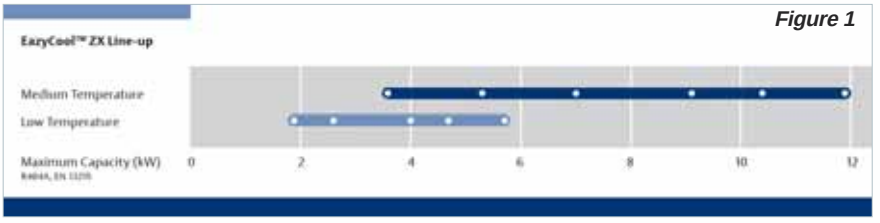


EazyCool ZX units are quiet with a sound pressure level of 41 dB(A) maximum in the daytime and just 36 dB(A) in night mode. Single-phase MT models have also recently been released extending up to nominal 4HP motor. In addition, "Emerson is set to bring to market a further extension to the ZX that will include Copeland digital-scroll technology", concludes Mark Lenz.

**Values measured according EN 13215, Te=-10/-35°C, Ta= 32°C, RGT=20°C.*

Contact: Robert Kebby, Sales Director, UK & Ireland. Tel: 0044–1189 838000; email: robert.kebby@emerson.com; www.emersonclimate.eu ■

Figure 1



While devising appropriate and tailored solutions for indoor environments is essential no matter what the application, there is no denying how critical it is in respect of data centres and computer rooms. System failure and downtime simply cannot be tolerated in such instances as the consequences can be catastrophic from both a performance and cost point of view.

Data centre peace of mind by Core AC

Consequently, it is perhaps the most complex area of building services and one which requires specialist attention based on experience, knowledge, technical know-how and product quality. Core Air Conditioning is one of the few companies operating in the field who match this exacting criteria.

Core has a long-standing reputation as one of the leading market players providing customised indoor environment control, and is especially renowned for delivering comprehensive turnkey packages for data centres and computer rooms. It has a wealth of experience and technical expertise in the field, thanks to its own highly-qualified, in-house engineers, and its partnership with the global Emerson Group and, by extension, Liebert.

Whether it is a new build or retrofit situation, Core engages with the client, the consultant and contractor (as appropriate) from the earliest possible stage, and only proposes a solution when all the relevant parameters have been thoroughly discussed and clarified. Invariably they include free-cooling chillers, cold aisle containment, modulating in-row cooling units, high-efficiency UPS systems, etc

Key issues considered at the design stage are power, cooling, metering, monitoring, fire suppression, leak detection, etc. These are then analysed in relation to the specific needs of the client to help identify gaps in power and cooling infrastructure, reduce operating costs, improve IT system availability, and plan for additional IT capacity.

Core also offers a full range of professional assessments, electrical testing and service management support, not just to prevent downtime, but to enhance data center performance while containing energy-usage costs.

Indeed, underpinning the entire process is the system's power usage effectiveness (PUE). When designing the technical spec for the project capital costs and day-to-day operating costs are considered in equal measure to system performance and reliability.

This emphasis is also carried through to ongoing maintenance procedures. Core's pro-active maintenance programmes can significantly extend the life of the power systems, decrease capital investment, optimise system efficiency and effectiveness, and increase overall system availability. This is done by way of a combination of the following:

— Preventive maintenance;

Emerson Network Power offers a complete menu of service options for data centres to meet any specific needs,

– Remote monitoring;
– Professional assessments;
– Upgrades;
– Efficiency of emergency response;
– Service management and support.

Continuous on-site and in-house system monitoring prevents major system failures. Potential problems are invariably flagged quite early so they can be dealt with quickly and efficiently before they become a major issue. To that end Core offers 24-hour call-out, seven days a week, 365 days of the year. It also has its own dedicated engineers who liaise with, and respond to, the client's Facilities Manager directly.

Apart from optimised system performance, trouble-free operation and excellent energy usage, what Core Air Conditioning provides most of all is client peace of mind.

Contact: Steve Wood, Core Air Conditioning.
Tel: 01 – 409 8912; email: steve@coreac.com;
www.coreac.ie ■

Damien Flynn is a Senior Project Engineer, working in the Building Services Engineering Group of Arup in Dublin. He is an experienced building services design engineer, with 16 years experience in commercial, industrial and education projects. Damien Holds a B Eng (Hons) degree in Building Services Engineering from Glasgow Caledonian University and is currently pursuing an Msc Degree in Energy Management at DIT Kevin Street. He has a keen interest in building services and energy matters and is a committee member of the CIBSE Republic of Ireland Branch.

BEMS and Controls

As part of his ongoing "know the fundamentals" series, this month Damien Flynn turns his attention to building management systems and controls. These articles are proving very popular among consultants and installers alike, and serve as an introduction to the topic for some, while acting as a refresher course for others.

Good controls are necessary for the safe and efficient operation of a modern building. The type of control systems can vary, from the simple switching on and off of equipment, to sophisticated building management systems that monitor and optimise plant performance to meet building needs. Either way, it is impossible to avoid the use of control systems in modern building services installations.

The control system does more than keep the inside of a building comfortable for the occupants. It is required to keep the HVAC plant operating efficiently, to ensure that all plant operates safely in the event of any unforeseen circumstances, and it must be capable of two-way communication with the personnel charged with its operation.

While it may be self-evident that modern, highly-serviced buildings and homes would ideally have a sophisticated control system, it should be realised that simpler buildings relying on a heating boiler and natural ventilation can still benefit from a modern BMS.

Studies have shown that even well-managed buildings waste up to 15% of the energy they purchase and, typically, businesses could cut their energy consumption by a quarter by utilising a BMS control system which is not just properly designed and installed, but tested, commissioned and validated prior to the building handover .

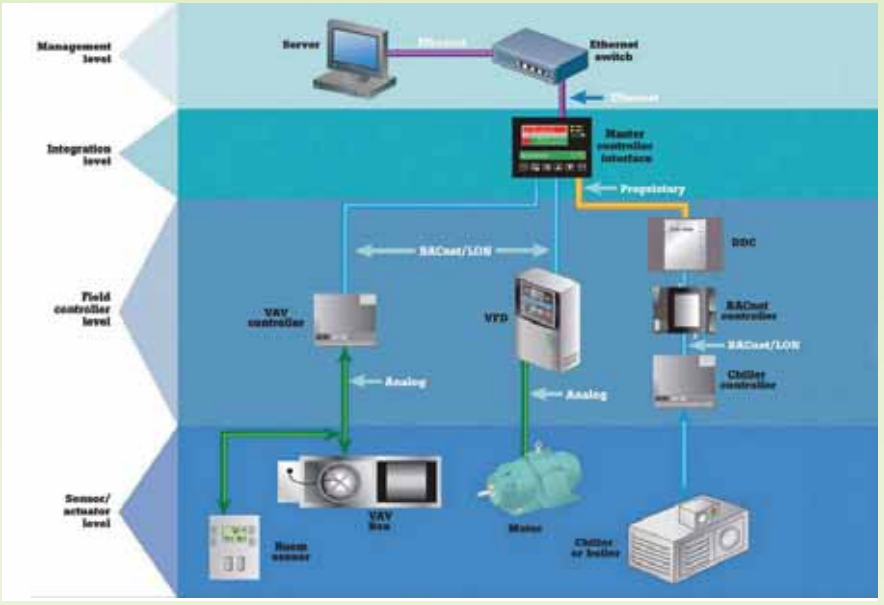
Controls are needed for all the various services and systems within the building, the typical building services control requirements being for the following systems:

– Heating
– Cooling
– Ventilation
– Lighting
– Building electrical engineering services
– Fire fighting and alarm systems
– Security systems
– Transport systems
– Water supply systems.

Any system that uses energy, which provides functional requirements such as security, will need control. However, there is often an order of priority for controls, with safety-critical systems taking precedence, followed by those systems that consume the most energy – usually space heating/cooling and lighting. While energy for heating is often provided by natural gas, cooling and lighting require electricity and are often the largest consumers of electricity in a building.

In all cases the two fundamental functions of building control systems are simply to switch equipment on and off, and to adjust the output of equipment to maintain the required operating conditions. The terms "controls" and "control systems" are often used to mean the same thing and, while for most practical purposes they do so, there are some minor differences.

Controls can be a generic term, used for a collection of individual control elements,



from sensors, valves and timers to control panels. It is often also used to mean a control system, although this does have a more specific definition

A control system consists of three basic elements – a sensor, a controller and a controlled device. The sensor measures some variable such as temperature and transmits its value to the controller. The controller uses this value to compute an output signal, which is transmitted to the controlled device, which then acts to change the output of the load, which acts on the controlled system.

The majority of cases in building services involve closed-loop control where the controller attempts to control the variable whose value is being measured by the sensor. The results of its actions are fed back to the controller input and the system is said to have feedback

Control system elements

A sensor is a device which detects and/or measures a variable, such as temperature, and transmits its value to the controller so it can act on the information received. Sensors are an important component of any control system, as they provide the basic and essential information on what you want to achieve with the control system. For example, a complex air conditioning system is basically there to maintain a comfortable room temperature for the occupants, and therefore the whole control system for it depends on the room temperature sensor.

It is often said that any control system is only as good as its sensors and the quality and accuracy of the information they provide. Sophisticated, complex and expensive software-based control systems will not necessarily compensate for poor quality or wrongly-positioned sensors.

A controller is any device that regulates and manages the operation of a building services system. The function of the controller is to receive information from the sensor and then use that to tell the controlled device what to do. The controller receives information from the sensor in the form of a measured value for whatever variable is being sensed, e.g. temperature, flow, pressure etc. It then uses this value to compute an output signal, by applying a logical calculation or program to the sensed value to decide what action should be taken. For example, maintaining a room temperate by increasing or decreasing the heating or cooling output from a fan coil unit.

Some controls terminology explained

Set-point: The set-point is the value to which a controller is set to achieve the desired value of the controlled variable. For example, a set point might be 20°C for room temperature, 50% saturation for room humidity, or 300 lux for a space lighting level;

Hunting: Hunting is a control state where the system does not settle to a steady value but oscillates around the set-point. It occurs when a controller is continually seeking to maintain a set condition which it is unable to do due to excessive system inertia or poor controls set up, leaving it literally "hunting" for the right condition;

Dead-band: The dead-band is a range that is set around the set-point value in response to the control problems that can be caused by some control systems. In order to avoid excessive hunting by the controller dead-band should be set close to the set-point;

Optimum start: One of the most important functions of a building control system is time control, ensuring that the plant is switched off when not needed. Substantial energy savings can be made by intermittent heating or cooling compared with continuous operation. In small buildings such as houses, and with lightweight construction, the warm-up time from a cold-start is short, often in the region of about 30 minutes, and therefore simple on/off controls such as used on domestic heating systems are adequate to provide the necessary time control. ■

Mitsubishi Electric has launched two new air conditioning controllers to strengthen its controls product range and provide advanced control options via newly-designed and simplified high-resolution user interfaces. The new controllers allow more users to benefit from the latest developments in easy-to-use controls for energy saving features, as well as for the more standard controller operations.

Advanced energy saving control through simpler interfaces

The AT-50A is Mitsubishi Electric's new MNET centralised controller which offers the ability to control and monitor 50 indoor units via a compact user-friendly touch-screen interface. The AT-50A controller adds to the company's existing AG150 centralised controller range and provides many of the same features.

The compact and well-designed AT-50A measures only 18cm wide by 3cm deep and can be mounted directly onto the wall, making it easy to install without the need for an indent or back box. This also gives installers the option of retro-fitting the new controller.

Installation becomes even easier and more cost-effective if the unit is used to control just one City Multi VRF air conditioning system, as the AT-50A can be installed onto the indoor unit MNET line and takes its power from there. With more than one City Multi system, a separate additional power pack is required by the controller.

M Series and Mr Slim air conditioning systems are also connectable via the relevant MNET adapters.

In addition, Mitsubishi Electric has designed the controller to allow Lossnay heat recovery ventilation units to interlock with the AT-50A, meaning that energy can be saved when Lossnay heat recovery ventilation is in operation.

For operators, the AT-50A comes with physical buttons to make the operation of basic functions quick and effective. Also, within the controller menus there are several levels of user access, including a home screen, menu and service screens. This provides the operator with the ability to monitor and control the air conditioning or third party equipment in a simple, easy-to-read layout while enforcing relevant password security where required.

The controller has several energy saving functions which can be used to centrally control and reduce energy usage across the whole system. The AT-50A has set-point limit function which can be used to restrict users from selecting very high or very low heating or cooling set points.

Another new addition to the market is Mitsubishi Electric's PAR-30MAA local controller, which provides all standard control functions but also offers advanced functions that are ideal for installers or contractors commissioning a system, performing maintenance checks or looking for errors.

The PAR-30MAA is the latest in the range of re-designed controls and provides a new, clearer, higher resolution LCD backlit screen. The user interface has been completely overhauled from the previous generation, simplifying the operation, set-up and navigation through the menus and options.

The PAR-30MAA controller now only has four main buttons with four dynamically-changing function buttons directly underneath the impressive new screen. A completely new option for the PAR-30MAA is the ability to configure the controller in either a simplified mode (mode, set point and fan speed control only), or in advanced mode providing full access to all of the controller functionality.

PAR-30MAA local controller comes with a range of built-in energy saving functions, such as set point limitation, auto set point return, and weekly scheduling.

Accessed via the maintenance password on the PAR-30MAA is a new "smooth maintenance" function which is available when the controller is connected to any Mr Slim outdoor unit. When initiated, this function can be targeted to any connected outdoor unit to obtain detailed service and operational data.

"This provides maintenance engineers with a simple way to monitor the system and gather all the essential running data necessary to make inspection, maintenance and diagnostics easier," explains Paul Sexton, Mitsubishi Electric.

The new PAR-30MAA local controller comes with a range of built-in energy saving functions, such as set point limitation, auto set point return and weekly scheduling. Also provided is the option to set up a Duty Standby system controlling two Mr Slim systems.

"These two new controllers extend the comprehensive range available to our customers and bring advanced functionality to make the installation, operation and maintenance of our equipment even easier and more efficient," adds Sexton.

Contact: Mitsubishi Electric Ireland. Tel: 01 – 419 8800; email: sales.info@meir.mee.com ■

MCCOOL CONTROLS & ENGINEERING LTD

HEAD OFFICE
Unit 12, Docklands
Innovation Centre,
East Wall Road, Dublin 3.
T. 01 8550542 F. 01 8550546
E. emccool@mccoolcontrols.ie
Contact: Eóin McCool

MUNSTER OFFICE
Unit 10, Ashdale House,
Blarney, Co. Cork
T. 021 4382055 F. 021 4382348
E. mail@mccoolcontrols.ie
Contact: Philip O'Reilly

NORTHERN OFFICE
No. 5, Seven Houses, English St.
Armagh City, BT617LA
T. 028 37528986 F. 028 37525742
E. mail@mccoolcontrols.ie
Web: www.mccoolcontrols.ie

FULL MAINTENANCE & SERVICE BACKUP FACILITY ANYWHERE IN IRELAND

ENERGY UNDER CONTROL

MCCOOL CONTROLS & ENGINEERING LTD

MCCOOL CONTROLS & ENGINEERING LTD ARE THE LEADING SUPPLIER OF:

- Building Management Systems (SEI ACA Certified)
- Energy Management Systems (SEI ACA Certified)
- Lighting Control Systems (SEI ACA Certified)
- Variable Speed Drives (SEI ACA Certified)
- Façade Management Systems
- Automatic Meter Reading Systems
- Integrated Control Systems
- Electrical Installation Service

Products:

- ELESTA – Building & Energy Management Controls Systems
- Cylon – BEMS Controls
- Stark Monitoring and Targeting Software
- Johnson – HVAC Control Equipment
- KNX/EIB Open Protocol Control Systems – Siemens, JUNG etc.
- Metering Equipment – Heat, Electricity, Oil and Gas
- Variable Speed Drives

Group pictured at the CIBSE Annual General Meeting in Dublin recently. To the fore are incoming Chairman Derek Mowlds and immediate past Chairman Alan Duggan.

CIBSE NEWS

Mowlds elected CIBSE Chairman

Derek Mowlds, Project Manager, Business Services Team, PM Group, was elected Chairman of the CIBSE Republic of Ireland Region at the recent AGM in Dublin. Derek has been Vice-Chair for the past 12 months and has worked very closely with outgoing Chairman Alan Duggan to ensure continuity and a seamless transition.

Committee members elected were Sean Dowd, Vice Chairman; David Doherty, Hon Secretary; Damien Flynn, Hon Treasurer; Gary McKeown, Social Secretary; and Alan Duggan, immediate past Chairman.

Under Alan's leadership CIBSE consolidated its position as the leading voice of consulting engineers, and further developed its relationships with relevant Government Departments, statutory bodies such as SEAI, and other construction-related representative associations.

Derek's aim for his term is to build on this success and to forge new links with appropriate bodies so that CIBSE both participates in, and contributes to, the formulation of regulations governing the building services sector.

When accepting the chain of office Derek paid tribute to Alan's reign, acknowledging that he had secured the CIBSE on a very firm footing at a time of great difficulty and change within the industry.

As we head into the summer recess Derek is already looking to the CIBSE programme of events for the 2011/2012 season which will commence in earnest in September. He already has most of the CPD technical evenings in place and the intention this term is to replicate each presentation throughout the regions, rather than having separate events.

Obviously, the annual conference will be CIBSE's largest undertaking. This has grown in stature year on year and is now widely acknowledged as an all-industry event not just limited to CIBSE members.

It is also hoped to further develop the social programme. The annual lunch and annual golf outing attracted record attendances under Alan's reign and there appears to be an appetite among members for another event which would provide a much-needed networking forum.

bs news will have full details of the CIBSE programme of events in our next issue.

McCool Controls – customised engineering BEMS solutions for 20 years

This year marks a major milestone for McCool Controls Engineering Ltd as it celebrates 20 years as one of Ireland's leading providers of Building Management Systems and Controls.

From the outset McCool's sought to provide engineering-led solutions which were designed specifically to suit the requirements of each particular project. Design excellence, coupled with technical expertise and professional project management are the hallmarks of the McCool Controls service. Underpinning the delivery of that philosophy is a thorough understanding of the practical aspects, and operational principles, of all building services applications.

McCool Controls have been involved in Ireland's most prestigious projects such as Hewlett Packard, DCU and UCD, and they have been at the forefront in developing solutions for large-scale installations. This practice continues today with recent projects including Terminal 2 in Dublin Airport, New Criminal Courts, Elm Park Complex and Eircom HQ Building.

Terminal 2, Dublin Airport

McCool Controls have expanded their portfolio to meet the changing needs of the industry with products such as KNX Façade Management Systems (FMS), KNX Lighting Control Systems, Web-based Control Solutions, Systems Integration, Variable Speed Drive Solutions, Metering Solutions, and Monitoring and Targeting packages for close Energy Control. An example of this is the Eircom HQ where McCool Controls where the first company to roll out a large-scale KNX solution for FMS, complete with full integration with the site BMS. This building won the Sustainable Energy Ireland 2009 Award for Sustainable Building Excellence. McCool Controls are the incumbent site maintenance specialist.

McCool Controls' unique strength is its ability to marry the theorectical with the practical, especially when it comes to the installation of complex and sophisticated building services control systems. The lessons learned from its extensive service and maintenance operation also play a crucial role in the development of unique solutions and ideas, many of which stem directly from problems encountered on site. From the end users perspective McCool Controls are the ideal provider as the company offers turnkey packages including in-house Panel Manufacturing, Electrical Installation, Specialist Devices, Specialist Software, Commissioning and Maintenance.

For many years McCools have championed the concept of the controls company doing the electrical installation of the controls system and have their own full-time electrical installation department. McCools have carried out this role in many of the largest projects built in Ireland, such as the recently-installed Terminal 2 in Dublin Airport. This is the system widely employed abroad and McCools have proven that this is the correct solution for delivering turnkey BMS Controls installations in an effective and cost-efficient manner.

The role of the Controls System engineer is critical to how a project is delivered to a client. These engineers are responsible for handing over a project and verifying that the control system is installed and functioning in accordance with the design requirements of the building, that the products are correctly installed and fit-for-purpose, and that the software is tested and set to provide the designed conditions while achieving the maximum energy savings.

McCools select and train their engineers

Eircom headquarters, Heuston South Quarter, Dublin

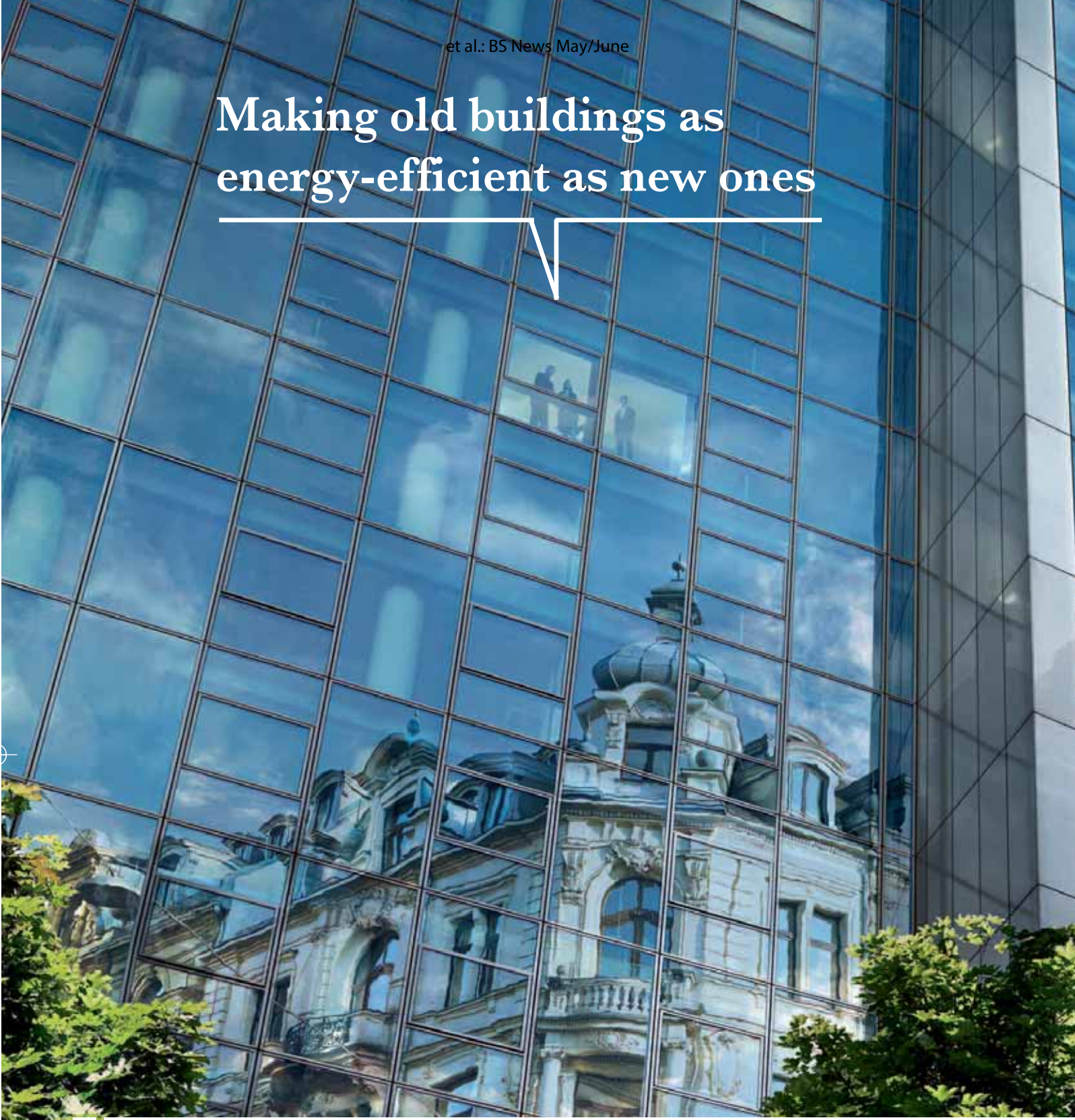
in the three disciplines essential for this key role. Given that all control systems are now micro-processor based, today's engineers must be fully competent in computer software and IT systems. However, this skill is of little benefit if the engineer does not have solid electrical engineering foundations, combined with a detailed knowledge of both the M&E aspects of building services. McCools build this skills base over many years of training, both in-house and through their manufacturers.

To complete the package McCools also offer a countrywide Service and Maintenance facility, thereby providing building owners with support packages tailored to meet their requirements over the full life-cycle of their building. McCool Controls take a proactive role and engage with their maintenance customers to continuously seek improvements and offer them the latest technical solutions, including software upgrades.

For all your BMS, Metering, Monitoring and Targeting, FMS and Maintenance needs McCool Controls has the answer.

Contact: Eoin McCool, McCool Controls Dublin. Tel: 01 – 855 0542. email: emccool@mccoolcontrols.ie; Philip O'Reilly, McCool Controls Cork. Tel: 021– 438 2055, email; mail@mccoolcontrols.ie; McCool Controls Armagh. Tel: 028 – 3752 5742. email: mail@mccoolcontrols.ie www.mccoolcontrols.ie ■

Making old buildings as energy-efficient as new ones



Having recently re-structured its management procedures and considerably strengthened the suite of services it provides, Sirus Group now offers a comprehensive one-stop-solution for all BEMS, HVAC, maintenance and energy requirements. It is accredited to ISO 9001 2008 and, as part of the process to attain this accreditation, has developed method statements and standard operating procedures for all of its activities.

Comprehensive building energy solutions from Sirus

Sirus has just unveiled its new, dynamic, inter-active website. It prompts questions across all the services provided and suggests a route to the best solution.

These are rigorously applied to all projects, irrespective of industry sector or scale, but are done so with sufficient latitude to allow for flexibility when the application calls for it. The four primary areas of operation of the Sirus Group now include BEMS, HVAC, Energy and Maintenance.

Separate Sirus Group companies also provide full life-cycle service and post-project support for all installations.

BEMS

Early involvement in the development of the design of the BEMS in conjunction with the end user, the architect, the M&E design engineers and the civil contractor ensures that the very best, fit-for-purpose solution is selected. This is a process that Sirus has been involved in for a number of very large projects for blue-chip companies and the results have been excellent. This methodology paves the way for a "right first time" solution.

Sirus provides BEMS across all sectors, such as commercial, industrial, pharmaceutical, biosciences and healthcare. The service includes:

– Review of design;
– A commitment to quality (ISO approved);
– Proven capability for project execution;
– Life-cycle support;
– Maintenance.

HVAC

Sirus provides heat generation plant for all manner of projects, including heat pumps, chillers, air conditioning systems, air handling and fan coil units. It also provides fully-installed BEMS control systems to control this plant.

Sirus engineers provide the balancing of air and water systems for HVAC plant installations, while a number of personnel are certified testers for clean room validation.

The service provided includes supply, installation and commissioning of all HVAC equipment and related ancillaries. Examples include:

– Chillers;
– Heat pumps;
– Close control units and air conditioning systems;
– Cleanroom validation.

Energy

Sirus provides free initial consultation and energy assessments.

If the initial assessment shows that energy saving opportunities exist, then a full energy investigation is usually undertaken. This takes place on-site and addresses the following areas:

– Breakdown of energy consumers;
– Performance assessment of electrical and thermal plant;
– Energy assessment of procedures, systems, regulations and general practices;
– Establishment of energy flows and main energy influencing factors.

This on-site investigation is supported by bill analysis and historical energy consumption analysis, which address supplier assessment, tariff structure analysis, energy consumption, price and charges, trend analysis, load profile analysis and benchmarking.

On conclusion of the investigation, a detailed report is submitted to the client, outlining all findings and opportunities.

Maintenance

Sirus has been providing maintenance services to clients for over 20 years. Corrective actions while maintaining equipment, and also modifications and enhancements to the systems, have delivered significant savings in energy consumption for clients, while also maintaining the operational integrity of these systems.

Sirus has controls, mechanical, electrical and commissioning personnel available to provide maintenance services. These include:

– BEMS maintenance;
– HVAC maintenance;
– Electrical maintenance;
– Energy management systems.

Contact: Martin Keogh, Sirus Group, Dublin. Tel: 01 – 460 2600; email:martin.keogh@sirus.ie; Liam Cotter, Sirus Group, Cork. Tel: 021 – 431 5552; email: liam.cotter@sirus.ie; www.sirus.ie ■

MYSON

MYSON the made in Ireland brand

Built specifically for Ireland, only Myson supply 1/2"valves directly from their new state of the art factory at Newcastle West, Co Limerick, including the ever popular TRV 2 WAY, the new Petite RADPAK and the MPE range of motorised valves. Also check out the new range of Programmable Room Thermostats built especially for the Irish market. **Myson Controls - Made here for you.**

Programmable Room Thermostats

MPE Range of motorised valves

TRV 2 Way

NEW Petite RADPAK

Potterton Myson Ireland Ltd.

Unit 7 Whitestown Business Park, Tallaght, Dublin 24, Ireland
Telephone: (01) 459 0870 Fax: (01) 459 0880 Email: post@potterton-myson.ie Web: www.potterton-myson.ie

Rettig Ireland is the Myson Controls manufacturing plant located in Newscastlewest, Co Limerick. The original site was founded in 1969 and purpose-built to manufacture, in high volume, a wide range of valve products for the heating industry. As demand grew through the 1980s for more sophisticated controls, Myson expanded the product range to meet the market requirement for high-quality control products.

Special Report

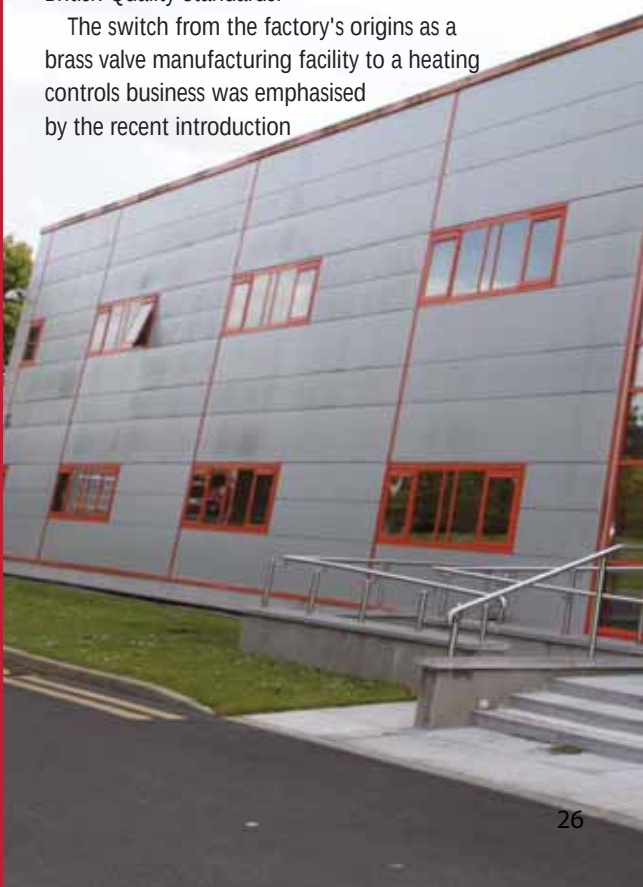
While a massive fire totally destroyed the old plant in 2005, less than a year later a brand new €25 million factory was opened on the same site. It comprises state-of-the-art production facilities and now serves the Irish marketplace, along with the UK, Europe and the rest of the world. Employment currently stands at 80 people which represents a very significant contribution to the local economy.

Given the significance of the Rettig facility virtually on its own doorstep, Potterton Myson Ireland – distributors for the Myson valve range in Ireland – recently hosted a factory visit of leading industry personnel to the plant. The purpose of the exercise was twofold – to share information and exchange industry views, and to demonstrate the enormous scale of the Newcastlewest operation.

Apart from a tour of the factory floor, guests were also given a number of brief, but very informative presentations by various company personnel.

In line with company policy of continuous product development, the Myson Controls range has expanded to include both mechanical and electrical controls. All production is carried out within the strict quality control procedures of ISO 14001 Environmental Management System and ISO 9001 Quality Management System. Products offered also comply with the European British Quality Standards.

The switch from the factory's origins as a brass valve manufacturing facility to a heating controls business was emphasised by the recent introduction



Rettig Ireland and PMI rise to market challenge

of radio frequency wire-free controls such as the range of electronic programmable room thermostats, and this proved to be a focus of attention for the group.

Other key products today are thermostatic and manual valves for heat emitters, manifolds, cooling valves, electronic programmers, control packs for underfloor heating systems, wax-based thermostats for OEM applications and, increasingly, both static and dynamic balancing valves used in larger residential and non-domestic applications. The core business for the future remains the development, manufacture and marketing of products for both commercial and domestic heating systems.

The success of this objective is very much evidenced by the continuous stream of innovative new products being brought to the marketplace, one of the latest being the Myson Petite thermostatic radiator valve.

The Petite combines attractive design with total reliability, and also incorporates the unique 2-way flow technology developed by Myson.

The Petite is available as a single valve or a convenient "TRV & manual" valve pack, in either 15mm or 10mm sizes, and finished in bright nickel. The Petite TRV is ideal for upgrading existing manual valves, on many heating systems, little or no plumbing alterations will be needed.

The dedicated 10mm version is ideal for replacing existing manual valves to full TRV control where 10mm pipe is already installed; no plumbing alterations should be necessary.

There is also new range of programmable thermostats – both hard-wired and radio frequency – which have been significantly upgraded with the

The visiting party pictured on the steps of the Newcastlewest plant with their Rettig Ireland and PMI hosts.

John Kelly, National Sales Manager for Myson on the island of Ireland with Paul Clancy, Managing Director, Potterton Myson Ireland and Ian Huxtable, Marketing Director, Myson Heating Controls.

Open door invitation

Both Rettig Ireland and Potterton Myson Ireland operate an open door policy for trade visitors. Anyone interested in an organised visit to either Rettig Ireland or the PMI training centre can contact Vincent Broderick at tel: 01–459 0870. Email: post@potterton-myson.ie

addition of chrome and black facia's to complement the standard white.

All include 'smart start' technology, this varies the start-up times to ensure that the building achieves temperature by the required time. It also continually learns the temperature rise requirement, delaying the start up of the system, therefore saving energy during milder weather.

Given the scale of the Newcastlewest plant, and the wealth of experience and technical expertise represented by the workforce, it is hardly surprising that Myson valves enjoy market-leading status, not just in Ireland, but in the UK and throughout Europe. At a time of economic downturn and declining market confidence, especially in construction-related industries, the Rettig Ireland plant is a shining example of how to go forward.

Brief details of the primary product categories are:

Manual valves

Manual valves regulate the flow of water through the radiator to control room temperature. These valves are also used to balance the heating system by increasing or decreasing resistance across individual radiators. Myson Controls manufactures three main types of manual valve – Matchmate, Matchmaster and Fullflow.

Thermostatic radsiator valves

Myson Controls produce a wide range of thermostatic radiator valves, from standard domestic requirements to polished decorative products. TRVs sense the air temperature around them and regulate the flow of water through the radiator to which they are fitted. Where the airflow is restricted an alternative is to fit Myson remote-sensing thermostatic heads to maintain the best efficiency.

PPV – plastic pipe valves

The latest addition to the Myson PPV range is the Integral Pushfit 90. Available for chrome TRVs, Matchmaster and the new slimline decorative range, this revolutionary integral all-in-one valve requires no separate elbow and has a double EPDM 'O' ring for added security. The attractive design is impact-resistant, providing flexibility and reliability for life.

Only Myson Controls offer a complete range of push fit valves, specifically designed for plastic pipe. Sizes include both 10mm/15mm, and also $^{1}/_{2}$" versions specifically designed for the Irish market.

Decorative valves

The new Decorative range of radiator valves from Myson is stylish as well as functional. They are designed to complement modern radiator styles and are beautifully finished in polished chrome. They are available as a handwheel, lockshield or thermostatically-controlled valve.

LST valve kits

Low Surface Temperature (LST) radiators require special radiator valve kits to enable thermostatic valves to operate correctly because of the protective casing around the hot radiator. To overcome the problem of the thermostatic sensing head being trapped inside the casing, two variations of valve kit are offered – the Close-Coupled LST Kit and the Direct-Fit Kit. With the use of two locking pins (which are supplied with the valve head) the Myson thermostatic valve can be locked at one setting, or limited to a specific range of control.

Electronic system controls

Today's electronic controls should be easy to understand and operate, they should also be straightforward to install and offer a full range of control for today's highly-efficient heating systems. Myson's new range of controls offers all of this, and includes useful and unique features. The range is compliant with the Revised Building Regulations - Part 'L', 2001/2002, and revisions for 2006.

It includes motorised valves, programmers, programmable room stats, thermostats and controls packs. ■

Since first established in 1974, Hevac has been very much to the forefront in introducing cutting-edge building services technology to both consultants and installers throughout the length and breadth of Ireland.

De Dietrich excellence from Hevac

Innovens wall-hung condensing boiler available from 8kw to 114kw.

Hevac's reputation has always been one of strength in respect of the scope and diversity of its product portfolio, and especially the market-leading status of the brand names represented. Underpinning that strength is a workforce of immense experience, practical know-how, and technical excellence.

It is hardly surprising then that one of the more recent additions to the Hevac portfolio is De Dietrich, the world-renowned manufacturer of pioneering heating technology solutions. De Dietrich, a symbol of quality since 1778, has been committed to the development of Sustainable Comfort® for more than 10 years by creating innovative heating systems which consume less energy and preserve the environment.

As exclusive De Dietrich distributors in Ireland, Hevac has forged a very strong relationship with the company, thereby making a wealth of innovative product, and technology, available on the Irish market.

As part of that knowledge transfer process Hevac runs regular in-house training seminars for both installers and consultants, and also takes them to the De Dietrich Training School in Mertzwiller, France. The objective is to enhance their general boiler knowledge and skills but, more specifically, to improve their understanding of condensing systems, condensing applications, and water treatment for condensing boilers.

Among the latest De Dietrich models to be introduced are the ECO commercial gas condensing boiler range, and the new Innovens Pro MCA wall-hung modulating condensing boilers.

The De Dietrich commercial condensing boiler range makes it possible to achieve substantial energy savings.

The ECO range of gas condensing boilers have a silicium-aluminium heat-exchanger and a modulating burner which maximises the energy use for commercial installations.

The total premix modulating burner guarantees:

- Optimal combustion quality across the entire output range thanks to a system of integrated mixing for a constant air/gas ratio;
- A boiler output range of 18 kW to 1146 kW which can be adapted to a wide variety of needs;
- Very low polluting emissions;
- Annual operating efficiency of up to 109% at 40/30°C.

The Diematic 3/m^3 regulation system can control and programme a direct circuit, a domestic hot water circuit, and two circuits with a mixing valve. It is also possible to connect a number of boilers in cascade.

The Innovens Pro MCA is a high-technology wall-hung gas condensing boiler. Using the latent heat of the steam that is contained in its vapours, condensing provides additional heating while using less energy.

Additional features include a Diematic iSystem control panel which is capable of adjusting boiler functioning to the most precise needs, and a modulating gas burner which reinforces the benefits of the condensing effect while guaranteeing very low emission levels. It is also capable of providing large volumes of domestic hot water.

Key benefits are:

- A boiler output range of 8.9 kW to 114 kW which can be adapted to a wide variety of needs;
- Optimised for energy savings and ecology;
- A system that is complete, flexible and intelligent;
- Customised domestic hot water output at high levels of comfort;
- Maximum performance in minimum space;
- Complete hydraulic cascade systems available with full cascade control for connection of 2 to 10 boilers, over 1000 kW.

Contact: Karl Carrick, Hevac. Tel: 01 – 419 1919. email: karlcarrick@hevac.ie; Mark Guinan, Hevac. Tel: 021 – 432 1066. email: markguinan@hevac.ie ■

Plumbing TIPS

Opportunity knocks … are you ready to capitalise on it?

As an RGII installer specialisation in your area of expertise is a given, and it's fair to say that during the halcyon days of the Celtic Tiger most have not had the need to stray from their core competencies, primarily installation and service of gas appliances.

How the world has changed in the interim. Best guesstimate for 2011 is that 10,000 new homes will be built from a high of 92,000 in 2007. Most of these new homes will be one-off houses and, although small in number relative to historic highs, heating solutions of various combinations are needed.

The revised SEAI grants available under the Home Energy Saving Scheme (although recently reduced) offer incentives for home owners to upgrade their boiler and controls (€560), or heating controls (€400). This is welcome news. This is an opportunity.

In *bs news* (March/April 2011) I referred to the greater distances that installers need to travel to make their business viable, and the simple steps you can take to improve your efficiencies. Now I would like to focus on realising sales opportunities that may present themselves.

Realising opportunities

Ask most homeowners where they get advice on possible heating solutions, and invariably the answer is "my installer is the first point of contact". What a great opportunity to influence the customer's decision-making process.

Strengths	Weaknesses
Installation and Commissioning of	*No experience in the following areas*
• Boilers • Controls	• Solar • mCHP
• Cylinders • Pumps	• ASHP • GSHP
• Gas Fires	• Pellet Boilers • Stoves
	• Electric Fires
Opportunities	**Threats**
System design is what my customers are asking for.	*Complete Solutions Gas/Oil Company* is providing this as part of their offer.
Need for more detailed quotations.	I have lost some recent installs to the above company.
Project management.	Market is changing rapidly and I may be unprepared for new technologies.
Light commercial applications.	
Ability to complete BER Ratings.	

Figure 1

by Paul Clancy, Managing Director, Potterton Myson Ireland.

However, realising this opportunity is the real challenge. This can only be done if you have the confidence and technical know-how to make recommendations on system design and integration. Boiler and associated control systems are very much bread and butter for installers, but today's heating solutions can take on many combinations and forms.

They can include

- *Gas/oil boilers with heating controls;*
- *Solar heating;*
- *Heat Pumps;*
- *Boilers that combine heat and electrical power (mCHP);*
- *Wood chip/pellet stoves;*
- *Biomass/wood pellet stoves;*
- *Wood gasification boilers.*

How to get started?

A good place to start is to complete a SWOT analysis.

S = Strengths

W = Weaknesses

0 = Opportunities

T = Threats

This simple exercise will help you highlight your core strengths and highlight the areas you need to focus on. See Figure 1 as a simple example.

Once the audit is complete, create a simple action plan to bridge the weaknesses. Then you can start to realise the opportunities, and manage the threats. Why not link up with some fellow installers when completing the SWOT exercise? Don't be surprised if you have similar challenges. ■

Published by ARROW@TU Dublin, 2011

RACGS

Spectacular Setting for President's Outing

The Old Head of Kinsale was the spectacular setting for the RACGS President's Day outing. The large turnout enjoyed an excellent day's golf and, while the sun shone brightly, there was a pleasant southerly breeze which made for challenging conditions.

Sponsor was Carel Ireland and Dave Killalea was on hand to present a wonderful array of prizes at the post-game meal.

Dave Killalea, Carel Ireland (sponsor) with John Sampson, second, Class 2.

Results:

Overall winner: Matt Butler (13) 33pts.

Class 1

First: Nicky Norris (14) 28pts; **Second**: Ger Darcy (12) 27pts.

Class 2

First: Jack Elstead (18) 33pts; **Second:** John Sampson (16) 25pts.

Front 9: Brendan Sharkey; **Back 9:** Dave Killalea.

Yellow Ball Winners: Pat Guilfoyle, Mark Kiely, Daniel O'Regan and Seamus Kerr (10th hole).

Longest Drive: Tom Curran; **Nearest the pin:** Brendan Sharkey.

Visitors

First: Liam Smith (17) 31pts; **Second**: Ken O'Riordan (22) 31pts.

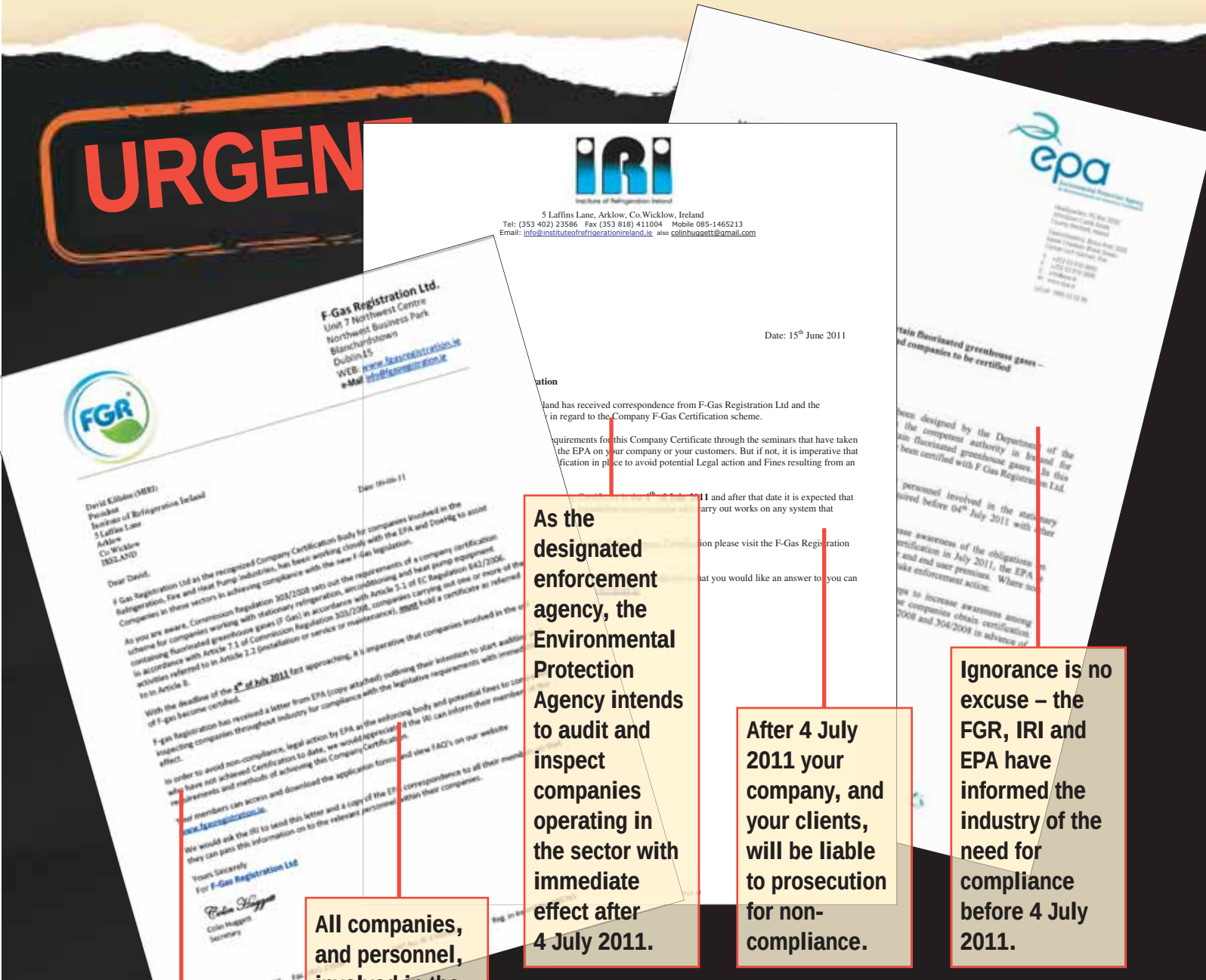
Dave Killalea with Brendan Sharkey, winner nearest the pin.

Left: Dave Killalea with Overall Winner Matt Butler and RACGS Captain Seamus Kerr.

Below: Yellow Ball competition winners – Dave Killalea with Pat Guilfoyle, Mark Kiely, Daniel O'Regan and Seamus Kerr (missing from picture).

F-GAS REGISTRATION

If your company is involved in refrigeration, air conditioning, fire or heat pumps it may be open to legal action if not registered!



As the designated enforcement agency, the Environmental Protection Agency intends to audit and inspect companies operating in the sector with immediate effect after 4 July 2011.

After 4 July 2011 your company, and your clients, will be liable to prosecution for non-compliance.

Ignorance is no excuse – the FGR, IRI and EPA have informed the industry of the need for compliance before 4 July 2011.

The final cut-off deadline for compliance with the legally-binding Company F-Gas Certification scheme is 4 July 2011.

All companies, and personnel, involved in the stationary refrigeration, air conditioning, fire and heat pump sectors are covered by this legislation.

F-Gas Registration Information Evenings

F-Gas Registration Ltd, the appointed company certification body, is holding a nationwide series for free information evenings on the subject.

City/Town	Venue	Date
Drogheda	City North Hotel	6 July 2011
Limerick	Maldron Hotel	7 July 2011
Cavan	TBA	5 October 2011
Portlaoise	Maldron Hotel	2 November 2011
Dublin	Sheldon Park Hotel	7 December 2011

Contact: Colin Huggett, F-Gas Registration. Tel: 086 – 208 9900; email: info@fgasregistration.ie; www.fgasregistration.ie

Craft apprentices

– an endangered species?

Like them or loath them, craft apprentices are an essential part of many of our indigenous industries, including the construction and mechanical services industries, where apprenticeships have, for many years, been the standard method of entry to all of the skills which make up these varied and wide-ranging industries. But, it is now time to review this educational model, writes *John T Smartt*.

John T. Smartt EngTech FCIPHE MCGI Assistant Head of the School of Construction, Dublin Institute of Technology.

In a similar way to myself, I am quite sure that many of you reading this article entered the mechanical/building services industry by the apprenticeship route as it has been the tried and trusted method of recruiting and training craftspeople since the Middle Ages. Since 1995, here in Ireland we have enjoyed the many benefits of a Standards-Based Apprenticeship System which superseded the previous time-based system that incorporated the Department of Education's Junior and Senior Trade Certificates Examinations.

The Standards-Based System consists of seven phases – Phases 1, 3, 5 & 7 are termed "On the Job" phases, while Phases 2, 4 & 6 are termed "Off the Job" phases. The system is administered by FAS who also provide the Phase 2 training in their training centres. The Institutes' of Technology around the country, and the Dublin Institute of Technology, are secondary providers to FAS for Phases 4 & 6.

During the past 16 years there is no doubt that this Standards-Based System has provided the training, education and experience which has produced world-class craftspeople. I know because it has been my privilege over the past 10 years to accompany a number of them in the plumbing/heating skill area to European and WorldSkills Competitions where they acquitted themselves very well. I am also aware from discussions with the other experts from around the world that the Irish apprenticeship system is looked upon with envy by the other countries, many of whom would be considered more advanced, industrially, than Ireland.

However, before we get carried away with our own success, allow me to sound a note of caution: THAT WAS THEN … THIS IS NOW! The current statistics related to apprenticeships make grim reading and points to an overall drop in apprentice numbers from a high of over 8,000 four years ago to less then 1,000 today.

In the mechanical services industry specifically, there was an 82% fall in the number of new apprentice registrations in plumbing, between 2008 and 2010, and a 68% fall in refrigeration craftsperson registrations in the same period. The fact is that the Irish economy, along with the construction and allied industries, will recover at some stage in the future. It may not reach the level of activity experienced in the past 10 to 15 years but, when it does start to recover, it is estimated that there will be an overall requirement for a national population of 2,500 apprentices.

For all of its excellent qualities, the Standards-Based System of Apprenticeship has one major weakness, which the current downturn (collapse?) in activity in the Irish construction industry has exposed – the entire system is based on the prospective apprentice initially being able to gain employment in the skill that he/she has chosen.

This is the first pre-requisite step on which all of the subsequent steps of the current apprenticeship system are based, without which, none of the subsequent steps can happen i.e. FAS registration and Phase 2 training, and by extension, Phases 3, 4, 5, 6 & 7. Even the most cursory look at the Irish construction industry today will reveal that not only is there little or no employment for skilled craftspeople in any of the skill areas allied to the construction industry, but there is definitely no prospect whatsoever of companies in this area taking on new apprentices.

This is the situation which I would now like to address in the remainder of this article. There is no doubt that the construction and allied industries will eventually recover to a level of activity which will require the input of new skilled craftspeople. We are all well aware that skilled craftspeople cannot be trained and stored until required, and that the lead-in time for a skilled craftsperson can be up to three to four years.

Perhaps, therefore, this is an appropriate time to take a fresh look at apprentice education and training in Ireland and explore other ways of delivering this education and training in a more efficient and cost-effective manner. Given our current difficulties, we should dispense with the requirement for employment in the skill as an apprentice as the first essential step in the process.

If we adopted this approach, prospective students and school leavers could select courses of study in the Institutes of Technology and the Dublin Institute of Technology in skills such as plumbing, refrigeration, carpentry and joinery, brickwork etc through the CA (Central Applications Office) in much the same way as they currently do for courses such as nursing, accountancy, marketing etc. That way the industry could continue to attract interested school leavers and others who are currently prevented from entering their chosen skill. The mechanical services industry needs to attract these interested young people as they will be the workforce of tomorrow.

In order to address this need, what is envisaged in the Institutes of Technology and the Dublin Institute of Technology are new courses which would be on a full-time basis for a period of two years (four Semesters). These would include all of the training and education inputs currently delivered

in Phases 2, 4 and 6 but in a continuous and structured format, along with additional modules to allow for ease of progression. It is envisaged that this two-year programme would deliver a total of 120 ECTS credits.

Continuous and end-of-term assessments would be included with perhaps work experience during the college summer break, in a similar way to existing full-time college students in other courses.

At the end of this two-year period the successful students, who will then be in possession of an IT/DIT Certificate in Technology (HETAC level 6), would then seek employment in their chosen skill as apprentices/interns and at that stage would be registered with FAS. This subsequent period of "on-the-job" training and experience with an employer would have a duration of two years and would bring the total length of the apprenticeship to four years, which is similar to the current system.

It is also possible that some of the students, on completion of the first two years of study in their chosen skill, may opt to continue in college and pursue their studies to degree and masters level in their chosen field.

This model of apprenticeship which front loads the education and training inputs has the distinct advantage of providing prospective employers with apprentices/interns who have a sufficient level of skill and knowledge to enable them to be productive members of the workforce from day one, albeit in a limited number of skill areas.

Some skills, especially those in the mechanical services industry, would require further short periods of education/training in the IT/DIT to obtain registration/licensing in areas such as natural gas, F Gas, welding, electrical services, renewables, etc which require the apprentice/intern to have gained the necessary on-site experience beforehand.

As with the current Standards-Based System, an Advanced Certificate (Craft) would be issued to those apprentices/interns who had successfully achieved their IT/DIT Certificate in Technology and also completed the prescribed period of "on-the-job" training and experience, along with any skill-specific registration or licensing requirements.

It is an appropriate time to take a fresh look at apprentice education and training in Ireland and explore other ways of delivering this education and training in a more efficient and cost-effective manner.

What I am describing may seem radical at first glance but it must be borne in mind that, in the whole of Ireland in 2010 under the current system, there were a total of 91 new apprentice registrations in plumbing and 26 in refrigeration craftsperson. You don't need to be a statistician to realise that, given these extremely low numbers, there will be insufficient apprentices entering the FAS Training Centres and subsequently the IT/DIT to sustain the numbers of instructors and college lecturing staff, and the training and education facilities which have been built up, improved and modernised over many years in these Institutes.

Unfortunately in the current economic climate, as far as these staff members and facilities are concerned, the old adage "use it or lose it" applies. If the cohort of experienced instructor/lecturing staff were to retire and not be replaced, or were to be redeployed and the specialised workshops/laboratories were to be dismantled, then the ability to educate and train the next generation of apprentices for the mechanical services industry could be very seriously affected.

The "New Model of Apprenticeship" which I have outlined above has been developed by the members of ITAC (The Institutes' of Technology Apprenticeship Committee) as a way of addressing the current situation in the economy, but especially in the construction industry with regard to the dramatic fall in the number of apprentices.

What I have outlined briefly above may not contain all of the answers but I am hopeful that it will stimulate thought and discussion among those who are involved and concerned about the future of apprenticeships in the mechanical services industry.

However, the time for thinking and discussion is not endless by any means and, if concerted action is not taken soon, then irreparable damage may be done to the industry's ability to recruit, train and educate its future apprentices. ■

The International Copper Association (ICA) says that heat exchangers made using MicroGroove™ copper tubes use less refrigerant than comparable coils made from extruded aluminum tubes with multiple channels. The difference is that the round tubes obviate the large header volume associated with flat tubes. Reduction of refrigerant volume is an important design criterion in today's environmentally-conscious marketplace.

MicroGroove copper tubes mean reduced refrigerant

A side-by-side comparison of three prototype heat exchangers was made by researchers at LU-VE SpA in Uboldo, Italy, a major manufacturer of air conditioning and refrigeration products. Stefano Filippini of LU-VE presented the results at a recent IIR Workshop. The three air-cooled condensers had similar cooling capacity, the same frontal areas, and used the same fans. The prototype heat exchangers were constructed using three tube technologies:

- Round inner-grooved copper tubes with diameters of 3/8inch or 9.52mm (representing conventional technology);
- Special inner-grooved copper tubes with smaller diameters of 5mm (representing MicroGroove technology);
- Special multichannel aluminum tubes with tube dimensions of 30mm by 2mm.

Internal tube volumes were greatly reduced for both the smaller-diameter copper tubes and the multichannel tubes, dropping from 5.1dm^3 to 2.41dm^3 and 2.81dm^3, respectively. Notwithstanding, the header volume for the multichannel tubes was 0.91dm^3 compared to only 0.36dm^3 for the other two condensers; hence, the total internal volume was smallest for the 5mm copper tubes. Hairpin tubes with elbow joints complete the tube circuitry in more compact fashion than the use of bulky headers (Note: 1dm^3 or one cubic decimeter is equivalent to a volume of one litre).

These smaller-diameter copper tubes with inner grooves provide high-efficiency and reduced size and weight. This is one section of a condenser coil.

This evaporator coil for a split-type air conditioner uses smaller-diameter copper tubes.

"This study highlights an important advantage of MicroGroove Technology," says Nigel Cotton, Global OEM Team Leader for ICA. "MicroGroove uses simple and familiar techniques well-known to manufacturers. The process is flexible and versatile because it does not require investment in complex brazing furnaces, and yet it results in superior products."

For more information on this study or MicroGroove technology, visit www.microgroove.net

back issues

Huxtable all a dither over car

Anyone who has ever met Ian Huxtable, Marketing Director, Myson Heating Controls, will know that he is partial to a nice motor. He is also quite tall and so likes a little bit of space, especially some decent leg room.

You can imagine his face then when he emerged off the plane at Shannon Airport recently to collect his hire car and drive to the Rettig Ireland manufacturing plant in Newcastlewest to team up with his PMI colleagues (see page 24).

Still, typical of the excellent sport that he is, Ian put a brave face on it and agreed to be photographed with his gleaming 2011 rental outside the factory. Did you ever see a happier, or prouder, motorist?

Mind that pothole!

Too late, for Tony McKinley at any rate. Unfortunately, while out riding his bike recently Tony tried to get the better of a pothole in the road, only to discover that it got the better of him!

A broken collar bone and severely-damaged bike was the outcome. While painful at the time, Tony is now recovering though it will be a while before he gets on the bike again.

O'Toole stays in the saddle!

Meanwhile, Standard Controls' Sean O'Toole managed to stay in the saddle and complete the Wicklow 100 tour, raising €500 for Cystic Fibrosis Ireland in the process.

The distance is long enough but all credit to Sean for participating on the day – Sunday 12 June last – as many lesser individuals thought better of it given the attrocious weather conditions which prevailed for the entire duration.

Thanks are also due to Sean's work colleagues who generously sponsored the cause.

Bolton St Celebrates Centenary

Congratulations to DIT Bolton Street on the milestone of its centenary year. Preparations are currently under way to mark the fact that the first classes commenced in October 1911.

Since then hundreds of thousands of students have studied in Bolton Street and have gone on to make a very significant contribution to their professions and to society, in Ireland and around the world.

Virtually all would have been, and many still are, readers of *bs news*, and Dr Mike Murphy, Director & Dean, College of Engineering & Built Environment, would like to hear from you.

He is especially interested in memorabilia such a old photographs, parchments, certificates, artefacts etc which could be included in a planned exhibition.

Get in touch at email: boltonstreet.100@dit.ie

The Association of Plumbing & Heating Contractors of Ireland (APHCI) has embarked on a major lobbying campaign targeting every single TD in the Dail on matters having a negative impact on installers' livelihoods. Response has been very encouraging.

According to a UK Government study just published, the health benefit of living with a view of a green space is worth £300 per person, per year. There is also more thought-provoking info. Worth a Google at uknea.unep-wcmc.org/

Am I the only one to see the contradiction in the recently-published book called *100 Places To Go Before They Disappear?* Conceived as a publication to champion the environment and endangered landscapes across all seven continents, it castigates mankind for the indiscriminate and wasteful use of fossil fuels.

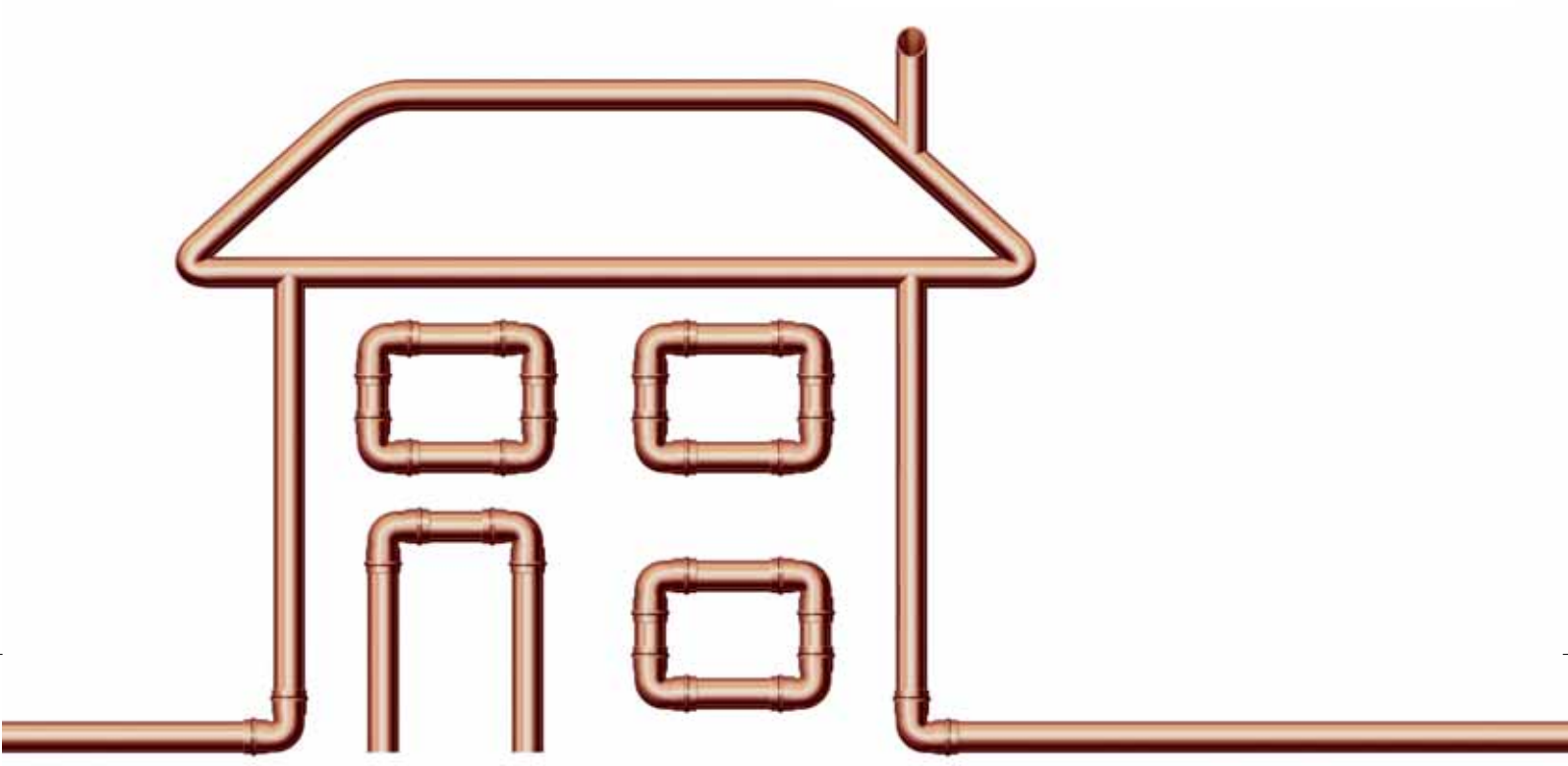
So, how come the title? It clearly suggests that people should get to see these wonders, and reinforces the readers' desire to do so with truly remarkable and stunning images of the various global wonders.

Problem is, how do people travel to such far-flung places without using fossil-fuel-guzzling planes and ships?

The answer is simple – don't … buy the book instead!

Irish Metal Industries Ltd
Cronin House, Damastown Industrial Park,
Mulhuddart, Dublin 15

t: 01 - 809 7028
f: 01 - 809 7001
e: conor.lennon@irishmetalindustries.com
www.irishmetalindustries.com



IRISH METAL INDUSTRIES: TUBE WITH BUILT IN QUALITY

WHEN QUALITY AND RELIABILITY COUNT, SPECIFY TUBE FROM IRISH METAL INDUSTRIES

Thousands of properties in Ireland have a built-in quality product – copper plumbing tube from Irish Metal Industries. With its 25 year guarantee and carrying either the Irish Standard Mark or BSi Kitemark, our tube offers you proven and trouble-free service, year after year.

You can rely on Irish Metal Industries tube – so ask for it by name.

Irish Metal Industries

Air Conditioning

Making a
World of
Difference

Knowledge is Power

Our range of 34 CPD accredited Information Guides are now available on CD

As a leading manufacturer, Mitsubishi Electric have a wealth of experience and expertise within all aspects of the highly evolving air conditioning industry which we're keen to share.

Mitsubishi Electric have published a wide range of Information Guides, to keep our customers well informed on all industry related topics. These comprehensive guides give clear explanations about complex legislation and how new technologies are enabling customers to achieve their targets.

To receive your FREE CD please call **(01) 419 8800** or email **sales@meir.mee.com**

www.mitsubishielectric.co.uk

MITSUBISHI ELECTRIC
LIVING ENVIRONMENTAL SYSTEMS

Celebrating 30 Years in Ireland

Air Conditioning | Commercial Heating
Domestic Heating | Photovoltaics